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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/594,398

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Shiro Dosho

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05/01/2008

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EXAMINER

LE, DINH THANH

ART UNIT

PAPER NUMBER

2816

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/594,398	Applicant(s) DOSHO ET AL.	
	Examiner DINH T. LE	Art Unit 2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

NON-FINAL REJECTION

The rejection of claims 2 and 11 has been withdrawn in view of the amendment to the claims.

The rejection over Dosho et al (US 6,995,607) has been withdrawn in view of the arguments presented in the Amendment filed 2/1/2008.

The prior art reference newly found necessitated a new ground of rejection is below:

Claim Rejections

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 6 are rejected under 35 USC 102 (b) as being anticipated by Klemmer et al (US 6,420,917).

Klemmer et al discloses in Figures 3-4 a circuit comprising:

- a first capacitor (C1) provided between an input terminal for the current signal and a reference voltage (ground);
- a switched capacitor circuit (CR, Q1, Q2) provided between the first capacitor (C1) and the ground; and
- a second capacitor (C2) provided in parallel to the first capacitor and the switched capacitor circuit.

Noted that, in the series of the capacitor (C1) and the resistor (R1) or the switched capacitor circuit (Q1, Q2, CR), the position of the capacitor (C1) and the position of the resistor (R1) or the position of the switched capacitor circuit (Q1, Q2, CR) in Figures 3-4 of Klemmer et al are exchangeable without alternating the performance of the filter circuit. Thus, the switched capacitor (CR, Q1, Q2) can be placed between the charge pump output and the resistor (R1) as claimed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12 are rejected under 35 USC 103 (a) as being unpatentable over Lin et al (US 7,016,450) in view of Callahan (US 4,344,050).

Regarding claims 1, 4, 6 and 10, Lin et al discloses in Figure 1 circuit comprising:

- a charge pump (20);
- an VCO (26); and a filter circuit having:
- a first capacitor (CP) provided between an input terminal for the current signal and a reference voltage (ground);
- a resistor (Rp); and
- a second capacitor (C0) provided in parallel to the first capacitor and the switched capacitor circuit.

However, Lin et al does not disclose that the resistor (R_p) comprising a switch capacitor circuit as combined in claims 1 and 6.

Nevertheless, Callahan suggests in Figures 1-5 a switched capacitor circuit having switches (11, 12, 111, 112) and third and fourth capacitors (13, 113) in combination to perform an equivalent function of a resistor (45) for easily implementing on an integrated circuit since the conventional resistor has a large size while the switched capacitors are allowed to be fabricated on the chip and for reducing noise effect and power consumption, see lines 35-56, column 2.

It would have been obvious to a person having skill in the art at the time the invention was made to replace the resistor (R_p) of Lin et al with the switch capacitor circuit as suggested by Callahan for the purpose of reducing size, noise effect and power consumption..

With regarding claims 2 and 7-8, a skilled artisan realizes that the capacitances of the third and fourth capacitors of Callahan et al are determined by a predetermined resistance value of the resistor (R_{32}) while the capacitance value of the capacitors (C_0 , C_P) of Lin et al are determined by the operational frequency of the filter. Thus, selecting the optimum capacitance values for the capacitors as claimed is considered to be matter of a design expedient for an engineer. Lacking of showing any criticality, it would have been obvious to a person having skill in the art to select the optimum capacitance value of Lin et al as claimed for the purpose of accommodating with the operational frequency of the circuit.

Regarding claims 3, 5, 9 and 12, it is well known in the art that the MOS transistors can be connected to function as the capacitors for easily being implemented on an integrated circuit in order to reduce size.

Regarding claim 11, wherein clock signals in Figure 2 of Callahan are generated by an *inherent* clock signal generator.

Response to Applicant's Arguments

The applicant argues that discloses that the switched capacitor circuit of Klemmer is provided after the first capacitor, and as a result it cannot be between the input terminal and the first capacitor. The arguments are not persuasive because the position of the switched capacitor circuit and the position of the first capacitor (C1) of Klemmer are exchangeable without alternating the performance of the filter circuit so that the switched capacitor circuit can be placed between the input and the first resistor (R1) as claimed. Thus, the limitations as recited in claims 1 and 6 remain readable on the circuit of Klemmer.

The applicant's arguments over Dosho et al (US 6,995,607) are moot without traverse.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DINH T. LE whose telephone number is (571) 272-1745. The examiner can normally be reached on Monday-Friday (8AM-7PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Richards, can be reached at (571) 272-1736.

Art Unit: 2816

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/DINH T. LE/

Primary Examiner, Art Unit 2816